

APPENDIX H.

ACCEPTABLE USE DETERMINATION FOR BENEFICIAL USE OF
ECOMELT FROM PASSAIC RIVER SEDIMENT
AT MONTCLAIR STATE UNIVERSITY

FORMAL REQUEST FOR AUD

SUPPORTING DOCUMENTATION



State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION
Site Remediation Program

Office of Dredging and Sediment Technology

P.O. Box 028

Trenton, NJ 08625

(609) 292-1250

FAX (609) 777-1914

JON S. CORZINE
Governor

LISA P. JACKSON
Commissioner

Mr. Michael C. Mensinger
Senior Engineer
EnDesco Clean Harbors, LLC
1700 S. Mount Prospect Road
Des Plaines, IL 60018-1804

April 22, 2008

RE: **MODIFICATION** of Acceptable Use Determination
Source: Lower Passaic River Dredging Pilot Study

Dear Mr. Mensinger:

This letter is forwarded in response to your request, dated December 14, 2007, for a modification of the Acceptable Use Determination (AUD) issued by the Department on September 19, 2007 for the dredged material removed from the Lower Passaic River Dredging Pilot Study. The AUD modification requests authorization to transport approximately 1 ton of Ecomelt to Montclair University. The request was amended on March 31, 2008 via a letter from the Township of Montclair regarding the beneficial use of the dredged material from the pilot study at Montclair University. The AUD application also serves to update the Department on the final disposition of the 295 tons of dredged material or processed dredged material from the demonstration project.

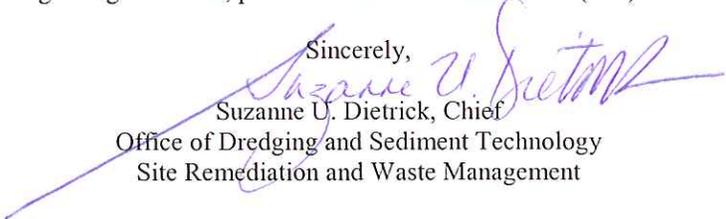
The December 14, 2007 AUD modification requests authorization to transport approximately 1 ton of Ecomelt to Montclair State University. The material is to be used in a demonstration project at the university as a partial replacement for Portland Cement in the manufacture of a 150-foot section of sidewalk at the university. The project and will be under the oversight of Dr. Greg Pope of the Earth and Environmental Studies Department and will include monitoring of any environmental effects of the use of the treated material. Lastly, in a letter, dated March 31, 2008, the university received notice that the Township of Montclair had been advised of the demonstration project, and that the municipality was in support of the project.

The December 14, 2007 AUD application also provided an update on the final disposition of the 295 tons of material which was authorized in the September 19, 2007 AUD to be transported to various placement sites. The approximately 134 tons of dewatered dredged material and Ecomelt was placed at the Prologis Elizabeth Seaport Business Park. The 160 tons of screened and dewatered sediments from the Lower Passaic River Dredge Pilot Study was transported and disposed of at Wayne Disposal Inc. - Site Number 2 Landfill (Hazardous and PCB Waste Landfill) in Belleville, Michigan.

Based on information presented in the AUD modification request, the Department hereby authorizes the transport and placement of the remaining 1 ton of Ecomelt to Montclair University. The results of this project should be incorporated into the report entitled "Sediment Decontamination Program - Cement Lock Technology, Final Report: Phase II Extended duration Test with Sediment from the Passaic River" dated November 2007, and currently undergoing revisions based on comments from the state agencies.

If you have any questions regarding this letter, please feel free to contact me at (609) 292-8838.

Sincerely,


Suzanne U. Dietrick, Chief

Office of Dredging and Sediment Technology
Site Remediation and Waste Management

C: Scott Douglas, NJDOT, Office of Maritime Resources
Eric Stern, USEPA Region II



November 14, 2007

Ms. Suzanne Dietrick, Chief
Site Remediation Program
Office of Dredging and Sediment Technology
New Jersey Department of Environmental Protection
P.O. Box 028
Trenton, New Jersey 08625

RE: Acceptable Use Determination –
Ecomelt from Cement-Lock Demonstration Plant
Origin of Dredged Material: Harrison Reach of the Passaic River

Dear Ms. Dietrick:

The purpose of this letter is to request an Acceptable Use Determination for approximately 1 ton of Ecomelt (remediated sediment product from the Cement-Lock technology produced during operation of the Cement-Lock demonstration plant at IMTT, Bayonne, New Jersey. The original feed material was sediment dredged from the Harrison Reach of the Passaic River.

The approximately 1 ton of Ecomelt is in storage at the facilities of CTLGroup (formerly Construction Technology Laboratories) in Skokie, IL.

This request for an AUD includes the following sections: 1) Cement-Lock Demo Plant Operations Summary, 2) Plan for Beneficial Use, 3) Letter to the local municipality with a discussion of plans for beneficial use of Ecomelt at MSU, and 4) Letter of approval from MSU for the beneficial use project, and 5) Analytical information in Support of AUD Request.

Cement-Lock Demo Plant Operations Summary

Passaic River sediment was processed through the Cement-Lock demo plant during campaigns in December 2006 and May 2007. During these campaigns, a total of about 30 tons of Passaic River sediment-modifier mixture was fed to the system. As part of the most recent campaign, we instituted flame management techniques to slow the accumulation of slag in the drop-out box. Slag accumulated in the drop-out box, nevertheless, and the test was terminated.

During both campaigns, Tetra Tech EMI (and their subcontractors) took environmental samples (sediment, Ecomelt, etc.) under the EPA SITE Program. AirNova took stack emission samples (upstream of the activated carbon bed as well as in the stack) during both campaigns. The results of the analytical tests on these samples have been completed and have been incorporated into the project final report.

Per the requirements of the EIPT permit, the Cement-Lock demo plant equipment has been completely removed from the IMTT site. Further, the site has been restored to its pre-lease conditions.

Plan for Beneficial Use

About 1 ton of finely ground Ecomelt will be used as a partial replacement for Portland cement in a batch of concrete for paving a stretch of sidewalk at the Montclair State University (MSU, Montclair).

A letter sent to the Mayor of Montclair is also included in with this request.

A letter of approval from MSU for the project is also included with this request.

Analytical Information in Support of AUD Request

Analysis of the Ecomelt from Passaic River sediment is attached to this AUD request. The files include:

Ecomelt – filename: Ecomelt Analysis.pdf (Note: SEM = Solid Ecomelt)

If you have any questions about the above, or need additional information, please contact me at 847-768-0602 (office), 630-518-2920 (cell), 847-463-0575 (fax), or mike.mensinger@gastechnology.org. Thank you for your consideration of this request for AUD.

Very truly yours,



Michael C. Mensinger
Senior Engineer

cc: Scott Douglas, NJ-DOT/OMR
Eric Stern, U.S. EPA Region 2
Keith Jones, BNL
Michael Roberts, ENDESCO Clean Harbors



Township of Montclair 205 Claremont Avenue Montclair, NJ 07042

tel: 973-509-5721

fax: 973-509-9589

Gray Russell
Code Enforcement/Environmental Coordinator
grussell@montclairnjusa.org

Amy V. Ferdinand
Director, Environmental Health and Safety
Montclair State University

March 31, 2008

Dear Ms. Ferdinand,

Thank you for your letter of March 19, explaining the proposed Pilot Demonstration Project at Montclair State University showcasing the beneficial use of sediments from the Passaic River.

The Township of Montclair is committed to sustainable use of materials, including used resources, and we are always interested in learning more from controlled experiments using innovative technologies. I understand that you have applied to the NJ Dept. of Environmental Protection Office of Dredging and Technology for the beneficial use of the dredge materials.

This letter acknowledges my prior conversation with Eric Stern, USEPA Region 2 program lead for the Sediment Decontamination Program, and the phone conversation and letter I received from you, explaining the project.

Because of the opportunity to combine the sediments with the organic material generated from Nicholas J. Smith-Sebasto (EAES, MSU), I would be pleased to be kept informed of the progress MSU achieves, and of any "project meetings, field demonstrations, and post-project monitoring and results of data evaluations as the project develops", as you have indicated.

Unfortunately my schedule with municipal matters reduces my ability to be a more active observer. I hope your project is successful.

If you have any further questions or comments please do not hesitate to contact me anytime, at your convenience.

Sincerely,
Gray

Gray Russell
Environmental Coordinator
Township of Montclair
Department of Administration, Code Enforcement,
and Environmental Affairs
205 Claremont Avenue
Montclair, New Jersey 07042
Tel. #: (973) 509-5721
Fax #: (973) 509-9589
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Montclair State University

Environmental Health and Safety

Voice 973-655-4367
Fax 973-655-7837
E-mail ferdinanda@mail.montclair.edu

March 19, 2008

Mr. Gray Russell, Coordinator
Department of Environmental Affairs
Township of Montclair
205 Claremont Avenue
Montclair, New Jersey 07042

Dear Mr. Russell:

Montclair State University is committed to being at the cutting edge of technological advancements as we seek the best possible educational tools that can benefit not only our gifted students and faculty but the community at large.

Because of Montclair Township's commitment to environmental stewardship and sustainability, we are informing you and the Township of an exciting Pilot Demonstration Study to be established at Montclair State University. The Demonstration will further develop educational and research programs within the MSU academic community in the discipline of Environmental Management (Masters and Doctoral Program). We hope that in the long run, results of the demonstration will improve the quality of the state environment and the quality of life for all its residents.

The proposed project is a pilot demonstration showcasing the beneficial use of sediments from the Passaic River, NJ that have been decontaminated using two innovative sediment treatment technologies. The New York/New Jersey Sediment Decontamination Program has been working since 1993 with partners from the U.S. Environmental Protection Agency Region 2 (USEPA), NJ Department of Transportation Office of Maritime Resources (NJDOT) and the Brookhaven National Laboratory (BNL) in determining the environmental and economic feasibility of decontaminating sediments from the Port of New York & New Jersey. The program focuses on sediments as a resource – not a waste. Technologies developed under this program have progressed from bench-, to pilot-, to full-scale demonstrations. Materials produced from decontaminated sediments include construction-grade cement, bricks, tiles, lightweight aggregate, and manufactured soil.

Phase 1 of the demonstration involves blending (with compost, sand, wood chips etc) and placement of twenty (20) cubic yards of decontaminated Passaic River sediment from the ***Biogenesis Sediment Washing Decontamination Technology***. The manufactured soil will be used for landscaping purposes as part of the MSU master landscaping plan.

Phase 2 involves pouring of approximately 150 feet of sidewalk that incorporates one (1) ton of post-treated sediment material from the ***Gas Technology Institute thermo-chemical Cement-Lock Process***. Ecomelt, which is essentially a granular black glass (beneficial use component) derived from the treatment process has been finely ground and will be used as a *partial* replacement for Portland cement in the production of a batch of concrete. The mix design for the

concrete will be based on an Ecomelt / Portland cement blend consisting of 40% Ecomelt and 60% Portland cement.

An application for Acceptable Use Determination (AUD) has been filed with the NJ Department of Environmental Protection (NJDEP) Office of Dredging and Technology for the beneficial use of these two materials. NJDEP has been an integral part of the technical and regulatory process in evaluating these innovative technologies.

MSU research faculty and graduate students of the Earth and Environmental Studies (EAES) Department will oversee the long-term monitoring and stability of these beneficial use applications. The MSU Division of University Facilities, Office of University Planning, and Office of Environmental Health and Safety are fully aware, support, and are integrated into this on-campus beneficial use demonstration project.

The 20 cubic yards of post-treated sediment prior to soil blending and the one ton of Ecomelt (contained in five 55-gallon sealed drums) prior to being incorporated into the batch of concrete will be stored and handled in an environmentally safe manner.

As per your recent discussion with Eric Stern, USEPA Region 2 program lead for the Sediment Decontamination Program, we would like to request a letter of acknowledgement and acceptance of the demonstration project from you in your capacity as Montclair Environmental Affairs Coordinator. Further, we would like to ask that you participate directly in the project. At a minimum, we would keep you informed of project meetings, field demonstrations, and post-project monitoring and results of data evaluations as the project develops. Your knowledge and reputation in recycling, environmental sustainability and climate change related to waste management would clearly be an asset to this program.

Please let me know if you are willing to provide a letter and your level of interest to participate. If you have any questions or require additional information, I can be reached at (973) 655.4367 or email: ferdinanda@mail.montclair.edu.

Sincerely,

Amy V. Ferdinand

Amy V. Ferdinand

Director, Environmental Health and Safety

Cc: Greg Bressler, VP of University Facilities, MSU
Robert Prezant, Dean – CSAM, MSU
Duke Ophori, Chair – EAES, MSU
Michael Kruge – EAES, MSU
Gregory Pope – EAES, MSU
Nicholas J. Smith-Sebasto – EAES, MSU
Mike Zanko, Director of University Planning, MSU
Michael Mensinger, Gas Technology Institute
John Sontag, BioGenesis Enterprises
Eric Stern, USEPA Region 2

Compound	P2-SEM-01	P2-SEM-02	P2-SEM-03	P2-SEM-04	P2-SEM-04 Dup	P2-SEM-05	P2-SEM-06	Average	P3-SEM-01	P3-SEM-02
39-TeCB	0.645 U	0.456 U	0.563 U	0.525 U	0.518 U	0.59 U	0.457 U	0.54 U	ND U	ND U
40-TeCB	14.1 C	11.4 C	1.09 U	1.22 CJ	1.23 CJ	0.762 U	0.968 U	4.40	8.21 U	6.3 U
41-TeCB	0.458 U	0.84 U	1.6 U	1.27 U	1.36 U	1.16 U	1.8 U	1.21 U	0.776 U	1.14 U
42-TeCB	9	6.45	1.18 U	0.937 U	1 U	0.899 U	2.76	3.18	4.4 U	3.62
43-TeCB	1.74	0.776 UJ	1.03 U	0.82 U	0.877 U	0.753 U	0.906 U	0.99	0.451 U	0.237 U
44-TeCB	34.6 C	27.8 C	1.04 U	0.827 U	0.885 UJ	0.773 U	0.974 U	9.56	19.6 U	13 U
45-TeCB	6 C	0.782 U	1.26 U	1.1 U	1.12 U	0.827 U	0.887 U	1.71	6.93 U	3.96 U
46-TeCB	0.713 U	0.827 U	1.28 U	1.12 U	1.14 U	0.843 U	0.881 U	0.97 U	1.31 U	0.857 U
47-TeCB	C44	C44	C44	C44	C44	C44	C44	C44	C44	C44
48-TeCB	5.69	0.616 U	1.15 U	0.91 U	0.973 U	0.825 U	1.07 U	1.60	3.19 U	2.4 U
49-TeCB	20.8 C	15.9 C	2.05 C	2.28 CJ	1.84 CJ	4.17 C	8.28 C	7.90 C	12.4 U	7.95 U
50-TeCB	0.663 U	0.769 U	1.21 U	1.06 U	1.08 U	0.798 U	0.856 U	0.92 U	5.1 U	3.01 U
51-TeCB	C45	C45	C45	C45	C45	C45	C45	C45	C45	C45
52-TeCB	35.2	0.638 U	1.43 U	1.13 U	1.21 U	0.942 U	22.5	9.01	23.4 U	15.1 U
53-TeCB	C50	C50	C50	C50	C50	C50	C50	C50	C50	C50
54-TeCB	0.691 UJ	1.02 U	0.766 U	0.7 U	0.706 U	0.397 U	0.243 U	0.65 U	0.444 U	0.173 U
55-TeCB	28.9	0.446 U	1.8 U	0.618 U	0.701 U	0.506 U	1.18 U	4.88	12.6 U	9.91
56-TeCB	0.569 U	0.43 U	1.46 U	0.503 U	0.916 J	0.432 U	1.01 U	0.76	6.29 U	4.59 U
57-TeCB	0.585 U	0.442 U	1.84 U	0.634 U	0.719 U	0.562 U	1.35 U	0.88 U	ND U	ND U
58-TeCB	0.553 UJ	0.418 U	1.76 U	0.605 U	0.686 U	0.519 U	1.23 U	0.82 U	0.462 J	0.54 U
59-TeCB	2.99 J	2.37 CJ	0.894 U	0.71 U	0.759 U	0.688 UJ	0.958 CJ	1.34	1.8 U	1.4 U
60-TeCB	0.543 U	0.411 U	1.61 U	1.18	0.628 U	0.488 UJ	1.13 U	0.86	2.01 U	1.93 U
61-TeCB	0.565 U	0.427 U	5.25 C	4.84 CJ	3.47 CJ	0.487 U	14.6 C	4.23	21.1 U	17.8 U
62-TeCB	C59	C59	C59	C59	C59	C59	C59	C59	C59	C59
63-TeCB	0.617 U	0.467 U	1.88 U	0.646 U	0.733 U	0.568 U	1.33 U	0.89 U	0.674 U	0.561 U
64-TeCB	13.3	0.468 U	0.86 U	0.682 U	0.73 U	0.595 U	0.798 U	2.49 U	7.61 U	5.69 U
65-TeCB	C44	C44	C44	C44	C44	C44	C44	C44	C44	C44
66-TeCB	0.57 U	0.431 U	3.08	0.605 U	2.07	0.534 U	8.22	2.22	13.4 U	10.5 U
67-TeCB	1.16	0.952 J	1.46 U	0.502 U	0.57 U	0.431 U	1.02 U	0.87	0.525 U	0.481 U
68-TeCB	0.494 U	0.373 UJ	1.56 U	0.538 U	0.61 U	0.487 U	1.12 U	0.74 U	0.279 U	0.239 U
69-TeCB	C49	C49	C49	C49	C49	C49	C49	C49	C49	C49
70-TeCB	C61	C61	C61	C61	C61	C61	C61	C61	C61	C61
71-TeCB	C40	C40	C40	C40	C40	C40	C40	C40	C40	C40
72-TeCB	0.546 U	0.413 U	1.64 U	0.564 U	0.64 U	0.535 U	1.27 U	0.80 U	0.277 U	ND U
73-TeCB	0.248 UJ	0.455 U	0.858 U	0.681 U	0.728 U	0.662 U	0.899 U	0.65 U	0.511 J	0.437 U
74-TeCB	C61	C61	C61	C61	C61	C61	C61	C61	C61	C61
75-TeCB	C59	C59	C59	C59	C59	C59	C59	C59	C59	C59
76-TeCB	C61	C61	C61	C61	C61	C61	C61	C61	C61	C61
77-TeCB	2.73	0.392	1.53 U	0.551 U	0.62 U	0.476 U	0.589 U	0.98	2.18 U	1.39 U
78-TeCB	0.561 U	0.424 U	1.75 U	0.603 U	0.684 U	0.499 U	1.24 U	0.82 U	ND U	ND U

Compound	P2-SEM-01	P2-SEM-02	P2-SEM-03	P2-SEM-04	P2-SEM-04 Dup	P2-SEM-05	P2-SEM-06	Average	P3-SEM-01	P3-SEM-02
79-TeCB	0.459 U	0.347 U	1.52 U	0.522 U	0.593 U	0.426 U	1.02 U	0.70 U	ND U	ND U
80-TeCB	0.502 U	0.38 U	1.54 U	0.528 U	0.6 U	0.464 U	1.04 U	0.72 U	ND U	ND U
81-TeCB	0.518 U	0.38 U	1.77 U	0.569 U	0.651 U	0.483 U	0.576 U	0.71 U	0 U	0 U
82-PeCB	3.82	0.75 U	1.36 U	1.16 U	1.5 U	0.768 U	1.91 U	1.61	2.09 U	1.45 U
83-PeCB	0.652 U	0.906 U	1.61 U	1.38 U	1.78 U	1.08 U	2.94 U	1.48 U	1.1 U	1.17 U
84-PeCB	8.22	0.679 U	1.31 U	1.12 U	1.45 U	0.812 U	4.68	2.61	5.01 U	4.2 U
85-PeCB	0.371 U	4.12 C	1 U	0.856 U	1.11 U	0.576 U	2.46 C	1.50	2.72 U	2.41
86-PeCB	23 C	0.548 U	1.03 UJ	3.72 CJ	1.13 UJ	0.591 U	14.8 C	6.40	12.8 U	7.73 U
87-PeCB	C86	C86	C86	C86	C86	C86	C86	C86	C86	C86
88-PeCB	5.62 C	2.01 C	2.11 U	1.8 U	2.33 U	0.773 U	1.87 U	2.36	3.11 U	2.56 U
89-PeCB	0.502 UJ	0.698 U	1.39 U	1.19 U	1.54 U	0.865 U	2.02 U	1.17	0.34 U	0.317 U
90-PeCB	30.3 C	22.2 C	1.11 U	0.948 U	1.23 U	0.642 U	12.6 C	9.86	16.9 U	10.9 U
91-PeCB	C88	C88	C88	C88	C88	C88	C88	C88	C88	C88
92-PeCB	6.68	4.41	1.31 U	1.12 U	1.44 U	0.77 U	2.73	2.64	3.14 U	2.22 U
93-PeCB	0.467 U	1.97 CJ	1.21 U	1.03 U	1.33 U	0.748 U	1.77 U	1.22	1.03 U	0.887 U
94-PeCB	0.461 UJ	0.641 U	1.25 U	1.07 U	1.38 U	0.788 U	1.82 U	1.06	0.347 U	0.322 U
95-PeCB	0.45 U	18.8	1.27 U	1.08 U	1.4 U	0.808 U	16.2	5.72	14.3 U	11.2 U
96-PeCB	0.483 UJ	0.444 U	1.29 U	1.11 U	1.3 U	1.06 U	1.68 U	1.05 U	0.356 U	0.373 U
97-PeCB	C86	C86	C86	C86	C86	C86	C86	C86	C86	C86
98-PeCB	2.3 C	1.56 J	1.07 U	0.913 U	1.18 U	0.663 U	1.59 U	1.33	1.21 U	0.911 U
99-PeCB	13.1	8.99	1.41	1.81	1.16 U	0.609 U	5.29	4.62	6.24 U	5.56 U
100-PeCB	C93	C93	C93	C93	C93	C93	C93	C93	C93	C93
101-PeCB	C90	C90	C90	C90	C90	C90	C90	C90	C90	C90
102-PeCB	C98	C98	C98	C98	C98	C98	C98	C98	C98	C98
103-PeCB	0.416 U	0.578 UJ	1.2 U	1.02 U	1.32 U	0.751 U	1.8 U	1.01	0.544 J	0.349 U
104-PeCB	0.344 UJ	0.308 U	0.893 U	0.81 U	0.859 U	0.607 U	0.555 U	0.63	0.178 U	0.17 U
105-PeCB	8.31	7.71	1.28	0.88 U	1.28 U	0.882 U	1.37	3.10	29 U	17.3 U
106-PeCB	0.603 U	0.477 U	0.911 U	0.899 U	1.23 U	0.866 U	0.666 U	0.81	ND U	ND U
107-PeCB	1.02 J	0.494 U	0.908 U	0.896 U	1.23 U	0.817 U	0.69 U	0.87	0.624 U	ND U
108-PeCB	C86	C86	C86	C86	C86	C86	C86	C86	C86	C86
109-PeCB	2.13	0.482 U	0.926 U	0.914 U	1.25 U	0.808 U	0.669 U	1.03	1.33 U	0.789 U
110-PeCB	33.9 C	25.7 C	0.853 U	0.728 U	0.942 U	0.454 U	1.15 U	9.10	18.5 U	11.7 U
111-PeCB	0.335 U	0.466 U	0.849 U	0.725 U	0.937 U	0.472 U	1.18 U	0.71	ND U	ND U
112-PeCB	0.323 U	0.448 UJ	0.876 U	0.748 U	0.967 U	0.48 U	1.23 U	0.72	ND U	ND U
113-PeCB	C90	C90	C90	C90	C90	C90	C90	C90	C90	C90
114-PeCB	0.653 U	0.583 J	0.919 U	0.875 U	1.23 U	0.87 U	0.339 U	0.78	0.28 U	0 U
115-PeCB	C110	C110	C110	C110	C110	C110	C110	C110	C110	C110
116-PeCB	C85	C85	C85	C85	C85	C85	C85	C85	C85	C85
117-PeCB	C85	C85	C85	C85	C85	C85	C85	C85	C85	C85
118-PeCB	22.4	17	0.908 U	2.06	1.41	2.6	0.336 U	6.67	14.2 U	9.85 U

Compound	P2-SEM-01	P2-SEM-02	P2-SEM-03	P2-SEM-04	P2-SEM-04 Dup	P2-SEM-05	P2-SEM-06	Average	P3-SEM-01	P3-SEM-02
	C86	C86	C86	C86	C86	C86	C86	C86	C86	C86
119-PeCB	0.336 U	0.467 U	0.885 U	0.755 U	0.976 U	0.488 U	1.24 U	0.74	ND U	ND U
120-PeCB	0.334 U	0.464 U	0.907 U	0.774 U	1 U	0.539 U	1.31 U	0.76	ND U	ND U
121-PeCB	0.668 U	0.528 U	1.1 U	1.08 U	1.48 U	0.936 U	0.768 U	0.94	ND U	ND U
122-PeCB	0.651 U	0.491 U	0.842 U	0.844 U	1.24 U	0.78 U	0.331 U	0.74	0.309 J	0.358 U
124-PeCB	C107	C107	C107	C107	C107	C107	C107	C107	C107	C107
125-PeCB	C86	C86	C86	C86	C86	C86	C86	C86	C86	C86
126-PeCB	0.801 U	0.582 U	1.02 U	1.02 U	1.33 U	0.92 U	0.392 U	0.87	0 U	0 U
127-PeCB	0.683 U	0.541 U	0.922 U	0.91 U	1.25 U	0.764 U	0.699 U	0.82	ND U	0.127 U
128-HxCB	4.24 C	3.52 C	1.29 U	2.01 U	1.85 U	0.704 U	1.34 UJ	2.14	3.41 U	1.8 U
129-HxCB	26 C	21.6 C	1.28 U	2 U	2.56 J	0.708 U	8.24 C	8.91	20.5 U	11.2 U
130-HxCB	0.805 U	0.925 U	1.7 U	2.65 U	2.44 U	0.964 U	1.88 U	1.62	1.56 U	0.917 U
131-HxCB	0.746 U	0.857 U	1.72 U	2.7 U	2.48 U	1.05 U	1.83 U	1.63	ND U	ND U
132-HxCB	0.719 U	0.827 U	1.55 U	2.41 U	2.22 U	0.933 U	2.88	1.65	5.49 U	3.61 U
133-HxCB	0.702 U	0.807 U	1.68 U	2.63 U	2.42 U	0.988 U	1.77 U	1.57	ND U	ND U
134-HxCB	1.7	1.48	1.76 U	2.74 U	2.53 U	1.18 U	1.96 U	1.91	1.15 U	0.478 U
135-HxCB	9.8	0.784 U	2.32 U	2.35 U	3.36 U	0.912 U	2.71 C	3.18	5.88 U	3.97 U
136-HxCB	3.23	0.583 U	1.86 U	1.88 U	2.69 U	0.839 U	1.94	1.86	1.75 U	1.31
137-HxCB	1.63	1.01 J	1.44 U	2.24 U	2.06 U	0.823 U	1.58 U	1.54	0.894 U	0.581 U
138-HxCB	C129	C129	C129	C129	C129	C129	C129	C129	C129	C129
139-HxCB	0.618 U	0.711 U	1.41 U	2.21 U	2.03 U	0.838 U	1.56 U	1.34	ND U	ND U
140-HxCB	C139	C139	C139	C139	C139	C139	C139	C139	C139	C139
141-HxCB	4.74	3.76	1.4 U	2.19 U	2.01 U	0.807 U	1.47 U	2.34	3.64 U	1.95 U
142-HxCB	0.74 U	0.851 U	1.63 U	2.54 U	2.34 U	1.03 U	1.81 U	1.56	ND U	ND U
143-HxCB	1.35	0.74 U	1.54 U	2.41 U	2.22 U	0.899 U	1.65 U	1.54	ND U	ND U
144-HxCB	0.665 U	0.795 U	2.25 U	2.28 U	3.26 U	0.927 U	1.58 U	1.68	0.535 U	ND U
145-HxCB	0.472 U	0.564 U	1.66 U	1.68 U	2.41 U	0.796 U	1.27 U	1.26	ND U	ND U
146-HxCB	0.572 U	0.658 U	1.33 U	2.08 U	1.91 U	0.77 UJ	1.55	1.27	2.92 U	1.47 U
147-HxCB	21.6 C	16.3 C	2.82 C	2.19 C	1.96 U	0.835 U	6.76 C	7.50	13.3 U	8.22 U
148-HxCB	0.653 U	0.78 U	2.26 U	2.29 U	3.28 U	1.01 U	1.68 U	1.71	ND U	ND U
149-HxCB	C147	C147	C147	C147	C147	C147	C147	C147	C147	C147
150-HxCB	0.511 U	0.611 U	1.65 U	1.67 U	2.4 U	0.734 U	1.18 U	1.25	ND U	ND U
151-HxCB	C135	C135	C135	C135	C135	C135	C135	C135	C135	C135
152-HxCB	0.53 U	0.634 U	1.86 U	1.88 U	2.7 U	0.846 U	1.34 U	1.40	ND U	ND U
153-HxCB	22.8 C	17.5 C	3.67 C	2.36 C	2.47 C	0.692 U	7.34 C	8.12	17.2 U	8.23 U
154-HxCB	0.55 UJ	0.794 J	1.79 U	1.81 U	2.6 U	0.785 U	1.29 U	1.37	0.433 J	ND U
155-HxCB	0.372 U	0.399 UJ	0.899 U	0.918 U	1.29 U	0.396 U	0.369 U	0.66	0.773	0.457 U
156-HxCB	3.01 C	2.29 C	2.06 U	1.67 U	1.61 U	0.976 U	0.53 UJ	1.74	2.24 U	1.37 U
157-HxCB	C156	C156	C156	C156	C156	C156	C156	C156	C156	C156
158-HxCB	0.478 U	2.18	1.03 U	1.61 U	1.48 U	0.541 U	1.05 U	1.20	1.88 U	1.08 U

Compound	P2-SEM-01	P2-SEM-02	P2-SEM-03	P2-SEM-04	P2-SEM-04 Dup	P2-SEM-05	P2-SEM-06	Average	P3-SEM-01	P3-SEM-02
159-HxCB	0.914 U	0.611 U	2.07 U	1.65 U	1.59 U	0.901 U	0.906 U	1.23	ND U	ND U
160-HxCB	0.534 U	0.614 U	1.11 U	1.73 U	1.59 U	0.623 U	1.13 U	1.05	ND U	ND U
161-HxCB	0.516 U	0.593 U	1.22 U	1.9 U	1.75 U	0.67 U	1.28 U	1.13	ND U	ND U
162-HxCB	0.853 U	0.57 U	1.85 U	1.48 U	1.43 U	0.818 U	0.829 U	1.12	ND U	ND U
163-HxCB	C129	C129	C129	C129	C129	C129	C129	C129	C129	C129
164-HxCB	1.91	0.597 U	1.07 U	1.67 U	1.54 U	0.589 U	1.13 U	1.22	1.59 U	0.795 U
165-HxCB	0.567 U	0.652 U	1.23 U	1.93 U	1.77 U	0.707 U	1.31 U	1.17	ND U	ND U
166-HxCB	C128	C128	C128	C128	C128	C128	C128	C128	C128	C128
167-HxCB	1.17	0.916 J	1.68 U	1.32 U	1.25 U	0.778 U	0.396 U	1.07	0.633 U	0 U
168-HxCB	C153	C153	C153	C153	C153	C153	C153	C153	C153	C153
169-HxCB	0.937 U	0.672 U	1.82 U	1.45 U	1.43 U	0.879 U	0.412 U	1.09	0 U	0 U
170-HpCB	9.08	6.38	1.49 U	1.54 U	2.41 U	0.936 U	2.55	3.48	8.1 U	6.45 U
171-HpCB	0.695 U	2.64 C	1.45 U	1.51 U	2.36 U	0.965 U	1.66 U	1.61	1.83 U	1.12 U
172-HpCB	0.674 U	2.31	1.51 U	1.57 U	2.46 U	0.932 U	1.71 U	1.60	0.988	0.88 J
173-HpCB	C171	C171	C171	C171	C171	C171	C171	C171	C171	C171
174-HpCB	8.93	7.33	1.4 U	1.45 U	2.27 U	0.881 U	2.19	3.49	6.06 U	4.24 U
175-HpCB	0.77 U	0.784 U	2.03 U	1.53 U	1.87 U	0.867 U	1.74 U	1.37 U	0.28 U	ND U
176-HpCB	0.605 U	1	1.64 U	1.24 U	1.51 U	0.748 U	1.42 U	1.17	0.697 U	0.596 U
177-HpCB	6.25	0.73 U	1.63 U	1.7 U	2.65 U	0.967 U	1.64 U	2.22	3.76 U	2.13 U
178-HpCB	0.786 U	2.37	2.13 U	1.61 U	1.96 U	0.921 U	1.81 U	1.66	1.44 U	0.786 U
179-HpCB	3.66	0.585 U	1.64 U	1.24 U	1.51 U	0.803 U	1.42 U	1.55	2.45 U	1.41 U
180-HpCB	19.2 C	13.7 C	1.9 JQ	1.2 U	1.87 U	1.79 J	4.02 C	6.24	10.5 U	8.05 U
181-HpCB	0.664 U	0.692 U	1.34 U	1.39 U	2.17 U	0.84 U	1.46 U	1.22 U	ND U	ND U
182-HpCB	0.712 U	0.725 U	1.94 U	1.47 U	1.79 U	0.83 U	1.58 U	1.29 U	ND U	ND U
183-HpCB	5.34 C	0.643 U	1.42 U	1.48 U	2.31 U	0.858 U	1.48 U	1.93	4.6 U	2.38 U
184-HpCB	0.499 U	0.508 U	1.46 U	1.1 U	1.35 U	0.653 U	1.26 U	0.98 U	ND U	ND U
185-HpCB	C183	C183	C183	C183	C183	C183	C183	C183	C183	C183
186-HpCB	0.576 U	0.587 U	1.57 U	1.19 U	1.45 U	0.685 U	1.33 U	1.06 U	ND U	ND U
187-HpCB	10.6	8.54	1.79 U	1.35 U	1.65 U	0.767 U	2.61	3.90	7.39 U	5.04 U
188-HpCB	0.508 U	0.515 U	1.34 U	1.03 U	1.2 U	0.592 U	0.583 U	0.82 U	ND U	ND U
189-HpCB	0.392 U	0.729 U	1.11 U	1.33 U	1.84 U	0.774 U	0.436 U	0.94 U	0 U	0.179 U
190-HpCB	2.23	0.534 U	1.12 U	1.16 U	1.81 U	0.703 U	1.2 U	1.25	1.08 U	0.952 U
191-HpCB	0.516 U	0.537 U	1.12 U	1.17 U	1.82 U	0.72 U	1.25 U	1.02 U	ND U	ND U
192-HpCB	0.547 U	0.57 U	1.12 U	1.16 U	1.82 U	0.71 U	1.2 U	1.02 U	ND U	ND U
193-HpCB	C180	C180	C180	C180	C180	C180	C180	C180	C180	C180
194-OcCB	0.575 U	4.14	2.07 U	1.74 U	2.51 U	1.19 U	1.73 U	1.99 U	2.43 U	1.76 U
195-OcCB	0.623 U	1.02 U	2.42 U	2.03 U	2.94 U	1.28 U	1.91 U	1.75 U	0.735	0.805 J
196-OcCB	2.29	0.787 U	2.19 U	2.28 U	1.99 U	1.1 U	1.67 U	1.76	1.48	1.17
197-OcCB	0.619 U	0.583 U	3.55 U	3.7 U	3.23 U	0.806 U	1.27 U	1.97 U	0.527	ND U
198-OcCB	5.77 C	0.788 U	2.12 U	2.21 U	1.93 U	1.07 U	2.51 C	2.34	3.29	2.27

Compound	P2-SEM-01	P2-SEM-02	P2-SEM-03	P2-SEM-04	P2-SEM-04 Dup	P2-SEM-05	P2-SEM-06	Average	P3-SEM-01	P3-SEM-02
Total TCDFs	0.502 U	0.336 U	0.369 U	0.184 U	0.15	1.83	0.189 U	0.509	1 U	445
Total of D/F Congeners	16.84	9.11	11.27	4.59	4.24	10.38	4.58	8.72	52	9951
	ng/kg									
TEQ (Dioxin)	0.972	0.998	0.818	0.663	0.608	0.690	0.622	0.767	11.406	626.3
Total TEQ (D/F+PCBs)	1.021	1.034	0.879	0.722	0.683	0.741	0.644	0.818	11.408	626.3
	mg/kg									
METALS	mg/kg									
Arsenic	2.3 U	2.1 U	2.1 U	2.1 U	2 U	2 U	2.2 U	2.1 U	16.3	6.37
Barium	159	166	235	222	216	20 U	22 U	148.6	251	124
Cadmium	0.66	0.58	0.83	0.8	0.77	0.51 U	0.55 U	0.7	0.535 U	0.162 U
Chromium	101	103	125	116	114	7.2	11.6	82.5	231	43.2
Cobalt	7.6	7.6	10.7	10.2	9.3	5.1 U	5.5 U	8.0	11	4.32
Copper	93.5	101	150	141	138	7.3	12.9	92.0	150	65
Lead	25.2	18	45.1	41.6	40.2	8.9	11.3	27.2	19.9	14.6
Manganese	242	237	315	300	290	14.7	27.9	203.8	787	240
Mercury	0.035 U	0.034 U	0.033 U	0.033 U	0.033 U	0.031 U	0.032 U	0.033 U	0.0244	0.00426 J
Nickel	29.7	27.7	38.2	36.1	34	4.1 U	4.4 U	24.9	67.1	25.1
Selenium	2.3 U	2.1 U	2.1 U	2.1 U	2 U	2 U	2.2 U	2.1 U	1.98 U	0.364 U
Silver	1.1 U	1 U	1.1 U	1 U	0.99 U	1 U	1.1 U	1.0 U	0.826 J	0.445 U
Zinc	88.1	79.6	220	203	200	14.1	20.9	118.0	41.7	34.8
	µg/kg									
PESTICIDES	µg/kg									
4,4'-DDD	0.36 U	0.35 U	0.33 U	0.32 U	0.32 U	0.34 U	0.33 U	0.336 U	1.09 U	1.06 U
4,4'-DDE	0.37 U	0.36 U	0.34 U	0.33 U	0.34 U	0.35 U	0.34 U	0.347 U	1.09 U	1.06 U
4,4'-DDT	0.45 U	0.44 U	0.42 U	0.41 U	0.41 U	0.43 U	0.42 U	0.426 U	0.956 U	0.93 U
Dieldrin	0.37 U	0.37 U	0.35 U	0.34 U	0.34 U	0.36 U	0.35 U	0.354 U	0.602 U	0.585 U
	µg/kg									
SVOCs	µg/kg									
Acenaphthene	0.6 U	0.59 U	0.56 U	0.56 U	0.56 U	0.57 U	0.57 U	0.57 U	0.882 U	0.946 U
Acenaphthylene	0.37 U	0.37 U	0.35 U	0.35 U	0.35 U	0.36 U	0.36 U	0.36 U	0.776 U	0.833 U
Anthracene	0.26 U	0.26 U	0.24 U	0.24 U	0.24 U	0.25 U	0.25 U	0.25 U	1.24 U	1.33 U
Benzo(a)anthracene	0.23 U	0.22 U	0.21 U	0.21 U	0.21 U	0.22 U	0.22 U	0.22 U	1.12 U	1.2 U
Benzo(a)pyrene	0.55 U	0.54 U	0.51 U	0.51 U	0.51 U	0.52 U	0.52 U	0.52 U	0.99 U	1.06 U
Benzo(b)fluoranthene	1.4 U	1.4 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.33 U	1.69 U	1.81 U
Benzo(g,h,i)perylene	0.62 U	0.61 U	0.58 U	0.58 U	0.58 U	0.59 U	0.59 U	0.59 U	1.53 U	1.64 U
Benzo(k)fluoranthene	0.62 U	0.61 U	0.58 U	0.57 U	0.57 U	0.59 U	0.59 U	0.59 U	1.73 U	1.86 U
bis(2-Ethylhexyl)phthalate	24 U	24 U	22 U	22 U	22 U	23 U	23 U	22.86 U	5.86 U	6.29 U
Chrysene	0.41 U	0.41 U	0.38 U	0.38 U	0.38 U	0.39 U	0.39 U	0.39 U	0.645 U	0.692 U
Dibenzo(a,h)anthracene	0.48 U	0.47 U	0.45 U	0.44 U	0.44 U	0.46 U	0.46 U	0.46 U	0.428 U	0.459 U
Di-n-octyl phthalate	7.3 U	7.2 U	6.8 U	6.8 U	6.8 U	7 U	7 U	6.99 U	5.86 U	6.29 U

Compound	P2-SEM-01	P2-SEM-02	P2-SEM-03	P2-SEM-04	P2-SEM-04 Dup	P2-SEM-05	P2-SEM-06	Average	P3-SEM-01	P3-SEM-02
Fluoranthene	0.27 U	0.26 U	0.25 U	0.25 U	0.25 U	0.26 U	0.26 U	0.26 U	0.984 U	1.06 U
Fluorene	0.68 U	0.67 U	0.63 U	0.63 U	0.63 U	0.65 U	0.65 U	0.65 U	0.908 U	0.975 U
Indeno(1,2,3-cd)pyrene	0.57 U	0.56 U	0.53 U	0.53 U	0.53 U	0.55 U	0.55 U	0.55 U	0.97 U	1.04 U
Naphthalene	0.44 U	0.43 U	0.41 U	0.41 U	0.41 U	0.42 U	0.42 U	0.42 U	1.23 U	1.32 U
Phenanthrene	0.39 U	0.39 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.38 U	1.78 U	1.91 U
Pyrene	0.29 U	0.29 U	0.27 U	0.27 U	0.27 U	0.28 U	0.28 U	0.28 U	1.59 U	1.71 U

Notes: "P2" refers to Phase II of the overall project conducted in December 2006. "P3" refers to the testing conducted May 2007.

"SEM" refers to "Solid Ecomelt" sample.

U - Analyte was not detected. The associated value is the estimated detection limit.

J - The analyte is present, but the concentration is below the quantitation limit. The concentration is estimated.

UJ - The detection limit is estimated.

C - The isomer coeluted with another of its homologue group. If followed by a number, the number indicates the lowest numbered congener among the coelution set.
 "-." The sample was not analyzed for that analyte.

* The total of these analytes includes non-detected values at the detection limit

Results of Leaching Tests Conducted on Samples of Ecomelt from Passaic River Sediment (Dec 06)

Compound	Class	P2-SEM-01	P2-SEM-02	P2-SEM-03	P2-SEM-04	P2-SEM-05	P2-SEM-06	Average
SPLP Metals								
Arsenic	SPLP	0.008 U	-	0.008 U	-	-	0.008 U	0.00800 U
Barium	SPLP	1 U	-	1 U	-	-	1 U	1.00000 U
Cadmium	SPLP	0.004 U	-	0.004 U	-	-	0.004 U	0.00400 U
Chromium	SPLP	0.01 U	-	0.01 U	-	-	0.01 U	0.01000 U
Cobalt	SPLP	0.05 U	-	0.05 U	-	-	0.05 U	0.05000 U
Copper	SPLP	0.025 U	-	0.025 U	-	-	0.025 U	0.02500 U
Lead	SPLP	0.01 U	-	0.017 U	-	-	0.032 U	0.01967 U
Manganese	SPLP	0.084 U	-	0.021 U	-	-	0.023 U	0.04267 U
Mercury	SPLP	0.0002 U	-	0.00029 U	-	-	0.0002 U	0.00023 U
Nickel	SPLP	0.043 U	-	0.04 U	-	-	0.04 U	0.04100 U
Selenium	SPLP	0.05 U	-	0.05 U	-	-	0.05 U	0.05000 U
Silver	SPLP	0.01 U	-	0.01 U	-	-	0.01 U	0.01000 U
Zinc	SPLP	0.13 U	-	0.1 U	-	-	0.12 U	0.11667 U
SPLP Pesticides								
4,4'-DDD	SPLP	0.000017 U	-	0.000017 U	-	-	0.000017 U	0.00002 U
4,4'-DDE	SPLP	0.0000041 U	-	0.0000041 U	-	-	0.0000041 U	0.00000 U
4,4'-DDT	SPLP	0.000018 U	-	0.000018 U	-	-	0.000018 U	0.00002 U
Dieldrin	SPLP	0.000013 U	-	0.000013 U	-	-	0.000013 U	0.00001 U
SPLP SVOCs								
Benzo(a)anthracene	SPLP	0.000019 U	-	0.000019 U	-	-	0.000019 U	0.00002 U
Benzo(a)pyrene	SPLP	0.0000039 U	-	0.0000039 U	-	-	0.0000039 U	0.00000 U
Benzo(b)fluoranthene	SPLP	0.000017 U	-	0.000017 U	-	-	0.000017 U	0.00002 U
Benzo(k)fluoranthene	SPLP	0.000021 U	-	0.000021 U	-	-	0.000021 U	0.00002 U
bis(2-Ethylhexyl)phthalate	SPLP	0.00013 U	-	0.00013 U	-	-	0.00013 U	0.00013 U
Chrysene	SPLP	0.0000093 U	-	0.0000093 U	-	-	0.0000093 U	0.00001 U
Indeno(1,2,3-cd)pyrene	SPLP	0.0000085 U	-	0.0000085 U	-	-	0.0000085 U	0.00001 U
TCLP Metals								
Arsenic	TCLP	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Barium	TCLP	1 U	1 U	1 U	1 U	1 U	1 U	1.0 U
Cadmium	TCLP	0.0092 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.0 U
Chromium	TCLP	0.01 U	0.01 U	0.01 U	0.01 U	0.014 U	0.011 U	0.0 U
Cobalt	TCLP	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.1 U
Copper	TCLP	0.15 U	0.025 U	0.025 U	0.025 U	0.034 U	0.026 U	0.0 U
Lead	TCLP	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Manganese	TCLP	0.21 U	0.071 U	0.037 U	0.032 U	0.037 U	0.034 U	0.1 U
Mercury	TCLP	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0 U
Nickel	TCLP	0.12 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.1 U

Compound	Class	P2-SEM-01	P2-SEM-02	P2-SEM-03	P2-SEM-04	P2-SEM-05	P2-SEM-06	Average
Selenium	TCLP	0.5 U						
Silver	TCLP	0.01 U	0.0 U					
Zinc	TCLP	0.7	0.31	0.16	0.13	0.22	0.17	0.3
TCLP Pesticides								
4,4'-DDD	TCLP	0.00017 U	0.00017 U	0.00017 UJ	0.00017 U	0.00017 U	0.00017 U	0.000145 U
4,4'-DDE	TCLP	0.000041 U						
4,4'-DDT	TCLP	0.00018 U	0.000180 U					
Dieldrin	TCLP	0.000013 U	0.00013 U	0.00013 U	0.00013 U	0.00013 U	0.00013 U	0.000111 U
TCLP SVOCs								
Acenaphthene	TCLP	0.000054 U	0.0000540 U					
Acenaphthylene	TCLP	0.000021 U	0.0000210 U					
Anthracene	TCLP	0.000029 U	0.0000290 U					
Benzo(a)anthracene	TCLP	0.00019 U	0.0001900 U					
Benzo(a)pyrene	TCLP	0.000039 U	0.0000390 U					
Benzo(b)fluoranthene	TCLP	0.00017 U	0.0001700 U					
Benzo(g,h,i)perylene	TCLP	0.000088 U	0.0000880 U					
Benzo(k)fluoranthene	TCLP	0.00021 U	0.0002100 U					
bis(2-Ethylhexyl)phthalate	TCLP	0.0013 U	0.0013000 U					
Chrysene	TCLP	0.000093 U	0.0000930 U					
Dibenzo(a,h)anthracene	TCLP	0.00012 U	0.0001200 U					
Di-n-octyl phthalate	TCLP	0.002 U	0.0020000 U					
Fluoranthene	TCLP	0.0002 U	0.0002000 U					
Fluorene	TCLP	0.000077 U	0.0000770 U					
Indeno(1,2,3-cd)pyrene	TCLP	0.000085 U	0.0000850 U					
Naphthalene	TCLP	0.000082 U	0.0000820 U					
Phenanthrene	TCLP	0.000099 U	0.0000990 U					
Pyrene	TCLP	0.00011 U	0.0001100 U					

Notes: "P2" refers to Phase II of the overall project conducted in December 2006.

"SEM" refers to "Solid Ecomelt" sample.

U - Analyte was not detected. The associated value is the estimated detection limit.

J - The analyte is present, but the concentration is below the quantitation limit. The concentration is estimated.

UJ - The detection limit is estimated.

C - The isomer coeluted with another of its homologue group. If followed by a number, the number indicates the lowest numbered congener among the coelution set.

-" The sample was not analyzed for that analyte.

* The total of these analytes includes non-detected values at the detection limit.